

ORDER

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

3410.10A

2/21/74

SUBJ: COOPERATIVE ENGINEER DEVELOPMENT PROGRAM

1. PURPOSE. This is a revision and reissuance of the order implementing the Airway Facilities program for cooperative development of engineering skills of FAA technicians aspiring to engineering status. It incorporates the policies and procedures that have been established subsequent to the original issuance and reaffirms the policy and guidance for program administration. In compliance with the provisions of section 3(d) of Executive Order 11035 and agency policy established in Order OA 1100.75, responsibility and authority to administer the CEDP program are delegated to each employing jurisdiction.
2. DISTRIBUTION. This order is applicable to all segments of the agency that establish a need for the cooperative development of technical personnel into engineering positions. It is distributed to branch level in FAA headquarters, regions, and centers and to all field offices, minus Air Traffic.
3. CANCELLATION.

Order 3410.10, Cooperative Engineer Development Program, dated June 28, 1968, and reprint of February 27, 1970, to include Change 1.
4. EXPLANATION OF CHANGES. The following changes have been made to Order 3410.10:
 - a. Program administration is delegated to each employing jurisdiction.
 - b. Clarification is provided to the effect that the minimum 24 semester hours required per 12 month period can be obtained through a minimum of nine semester hours each fall and spring semester with the balance completed in the summer semester. (Change by AOA-1 dispatch dated February 17, 1970.)
 - c. Requirement for CSC Tests 56A and B and 157A are deleted (APN-1 Notice N3410.13 dated March 3, 1970.)
 - d. The BACKGROUND paragraph has been revised to delete statements of justification for the program.
 - e. Clarification is added to state that employees are not eligible for this program if they have already demonstrated that they possess the minimum qualification requirements or alternate requirements for conversion to engineering status.

Distribution: WRNC-3, FOF-0 (Minimum) (Minus FAT-0)

Initiated By: AAF-230

- f. Includes a positive statement that positions are considered to be developmental reassignments under the Merit Promotion Program.
 - g. Deletes all references to the Graduate Record Examination (GRE), the use of which was discontinued by CSC on August 30, 1971, as part of the Alternate Qualification Standard for Engineers.
 - h. Provides guidance for establishment of eligibility requirements commensurate with entrance requirements of the receiving college of engineering and a formal program curriculum acceptable to the appropriate State Board of Examiners.
 - i. The wording in the order has been changed so that the term "Engineer" relates to a Professional Engineer as outlined in the Civil Service Qualification Standards for all Professional Engineers, GS-800 (5-15) and "Registered Engineer" relates to any Professional Engineer who is legally registered with any State Board of Examiners.
5. POLICY. In the interest of obtaining and replenishing the best possible staff of qualified engineers, each employing jurisdiction of the agency shall provide out-of-agency training and simultaneous program-oriented engineering experience to carefully selected employees when circumstances warrant this method of development. The employee and the agency shall enter into an agreement which will provide mutual benefits and protection for the financial and time investment of both.
6. BACKGROUND. The agency has approximately 9,000 technicians who are working in engineering-related fields, many of whom have received significant technical training prior to and during their Government career. Some technicians have acquired experience with agency mission, policies, and programs, and except for specific technical knowledge deficiencies, would be excellent candidates for engineering positions within the agency.

Past efforts of technicians to acquire engineering level training have often been handicapped because of excessive distance to a college of engineering and because of difficulty in scheduling duty hours to permit college attendance on a regular basis. This program is designed to assist employee progression to the engineering level and to enable the agency to fully and effectively utilize its manpower resources.

While Airway Facilities personnel have been the predominant participants in the program since its conception, the program has been expanded to include other segments of the agency.

7. PROGRAM ADMINISTRATION. Engineering-in-training positions will be available to FAA technicians and technical specialists whose qualifications, demonstrated initiative, and ability clearly indicate their potential to complete the program. These positions will be identified by sponsoring divisions within employing jurisdictions and established within authorized staffing ceilings, unless otherwise provided by budgetary processes, and shall be located near accredited engineering colleges or universities.
- a. Determination of Requirements. Each sponsoring Division AF, FS, AS, etc., shall assess its requirements for replenishing its engineering work force on an annual basis. This assessment shall identify the number of engineers to be obtained by each of the existing methods: Outside recruitment, Engineering Intern Program, and the Cooperative Engineering Development Program.

This assessment shall include consideration of attrition rate and future expansion or reduction in each engineering discipline. No quota or compulsory number will be set by the program. Each employing jurisdiction shall exercise independent control of its program. Program Requirements, once determined, will be submitted in response to the annual "Call for Estimates" in accordance with Order 2500.13.

- b. Selection. Not later than January 1 of each year, the regions, centers, and the appropriate headquarters organization shall submit to the appropriate manpower official the number, location, series and grade level(s) of positions which they intend to utilize in the program. This list shall be reviewed and advertised as soon as possible so that selections can be made no later than April 15.

These positions are considered to be developmental reassignments under the Merit Promotion Program. Candidates selected may be promoted without further competition when all legal, regulatory, and other qualifications are met.

Candidates will submit their applications and selections will be made in accordance with the procedures described in Appendix 1 of this order. Candidates must have sufficient semester hours in an accredited educational institution to constitute two years credit towards a Bachelor of Science Degree. More specific requirements and additional guidance are provided in Appendix 1.

Employees who already possess the minimum qualifications for an engineering position as demonstrated by successful completion of a state EIT exam, engineering degree, or other alternate qualifications

outlined in the Civil Service Qualification Standards for all Professional Engineers, GS-800(5-15), are not eligible for this program.

- c. Agreements. Employees selected shall sign the agreements listed in Appendix 2 of this order. These agreements are provided to establish a firm understanding between the employee and the agency as to the provisions of the program and the commitment of each to a course of action.
- d. Interim Placement of Participants. The agency shall provide engineering experience to the participant throughout the two-year training period. To permit this, the employee shall be reassigned to an engineering-type position in a regional, headquarters office, or other location where:
 - (1) The necessary educational institution is within reasonable commuting distance (30 miles or less is recommended); and
 - (2) The workload of part-time engineering duties is clearly evident and will provide experience to the participant and benefit to the Government. The participant shall be directly assigned to and supervised by an engineer, and such supervision will be as close as is required to assure his satisfactory performance improvement in the position throughout the training period. The duty hours of the incumbent will be adjusted to accommodate classroom attendance, both scheduled and irregular as in the case of special seminars, etc. However, an average of at least 40 hours of regular work per pay period over the period of the program is required. Variations from this policy will require approval from the sponsoring division chief.
- e. Student Environment. During the program, the participant will be engaged in both engineering-type work and formal educational assignments. The employee's work activity will be at his assigned duty station and will average at least 40 hours per pay period over the period of the program. The formal educational activities will be a combination of at least 40 hours of classroom attendance and study. (A minimum of 24 semester credit hours of program-furnished courses shall be completed by each student in a 12-month period, and a minimum of nine semester hours completed each regular fall and spring semester with the balance completed in the summer.)

The employee will receive 80 hours regular pay per pay period. Overtime and other premium pay will be subject to prevailing regulations. Since these provisions vary from time-to-time,

close scrutiny should be made of any premium pay authorization for students. However, premium pay will not normally be authorized.

The agency will pay tuition, books, and certain other allowable expenses for approved courses (see Appendix 2). Since the courses will be aimed at successful attainment of the engineering equivalency (Engineering-in-Training) status, they do not necessarily provide sufficient credits for a degree. However, if the student already has sufficient credits, or takes enough at his own expense during the program, to obtain an engineering degree, this degree may be accepted in lieu of the EIT examination.

- f. Engineering Status. Within the two-year limit of assignment to the program, the participant should gain the knowledges and skills which will permit him to perform as an engineer through at least one of the following methods:
- (1) Successful completion of the accredited college level courses outlined in the Civil Service Qualification Standards for all Professional Engineers, GS-800, 5/15.
 - (2) By acquiring the qualifications to take a state Engineering-In-Training (EIT) examination. Prerequisite qualifications for state examinations vary considerably. More specific information must be obtained from the State Board of Examiners by the employing office in preparation for assignment of candidates.
- g. Post Program Assignment. A graduate of the Cooperative Engineer Development Program shall be assigned to a position within the organization having employment jurisdiction over the location of his training. The first assignment should be in a position classified in the discipline studies, and at least at the same grade as that held upon entry into the program. Since this will require the graduate to be fully qualified for this new position, frequent counseling and some adjustment of the participant's activities will be necessary throughout the course of the program. The employing office must plan ahead for the graduate's permanent assignment and identify and encumber the position well in advance of the program's end. The participant may be assigned the duties of the position throughout the program where possible.
- h. Failure to Complete the Program. In the event that any participant is not maintaining satisfactory grades in any of the required courses, the student shall be required to immediately drop any courses which he may be taking outside the program requirements. This will permit him to concentrate his efforts on the critical studies. In the event that he receives a final failing grade in any required course, he shall be dropped from the program and returned to a position for which he qualifies. However, in exceptional cases, the sponsoring division chief may make a determination to continue the student if

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it appears that satisfactory attainment of the program objective is possible for the individual case. An example of such a case might be a student who failed courses because of illness or enforced absence beyond his control or a student failing a course near the end of the program who still qualifies for and passes the EIT examinations.

8. RESPONSIBILITIES. Responsibilities for program administration are as follows:

- a. Airway Facilities Service, in cooperation with other interested services, shall:
 - (1) Establish, evaluate, and update the procedures, standards, and criteria of the program.
 - (2) Participate in the program as headquarters requirements indicate by identifying and encumbering headquarters positions to be filled by graduates, establish headquarters training positions for participants and budget for expenses for those selected for these positions.
 - (3) Provide a designated representative to the selection panel for headquarters selections as required.
 - (4) Provide staff assistance to the regions where required.
- b. Office of Training will fund the costs for tuition, books, and required training material.
- c. Regions, Centers and participating Headquarters Services shall:
 - (1) Conduct a Cooperative Engineer Development Program as requirements indicate by identifying and encumbering positions to be filled by graduates, establish training positions for participants and budget for expense for those selected for these positions.
 - (2) Recommend to AAF-1 any changes or improvements to the program.
 - (3) Assign graduates of the program and assure that the rights of any failing participant are protected.
 - (4) Periodically advise the Manpower Division of the progress of the program participants.
 - (5) Request that the Manpower Division advertise all positions agencywide and provide qualification evaluation of candidates' experience and education.

d. The Manpower Division shall:

- (1) Review and evaluate the establishment, policy, and administration of the program to determine conformance with existing personnel regulations, including any training agreements, and determination of effectiveness of the program from a personnel management viewpoint.
 - (a) Assure that Civil Rights Officer and EEO Specialist receive a copy of the advertisement to conduct internal outreach efforts for minority and woman candidates;
 - (b) Review application packages in accordance with criteria to weed out those found not qualified;
 - (c) Vouch to immediate and higher level supervisors of eligible candidates; and
 - (d) Assemble all relevant materials, convene panel and follow prescribed procedures.

The panel will rate and rank candidates (sufficient number to provide for alternates) and refer to the appropriate division chief for selection.

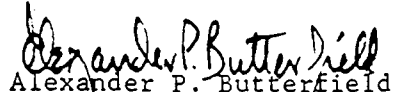
- (2) Submit the "Request for Out-of-Agency Training," "Agreement to Continue In Service (FAA Form 3000-3)," and the "Procurement Request (Form DOT F 4200.1)" directly to ATR-300 without delay.
- (3) Report selections to APN-1 with a copy to AAF-200 giving brief summary of selectee's background, potential, and provide a follow-up letter at the completion/termination of participation in the program.

e. The participant shall:

- (1) Furnish to his employing office the necessary cost data required to complete the Form DOT F 4200.1 (preferably prior to the beginning of the semester).
- (2) Submit his claim for reimbursement (Form SF-1164) for textbooks and required material that is unobtainable from the employing office directly to ATR-300. The claim for reimbursement shall contain the name and number of the course, textbook title, author, publisher, publication date, and a statement that the purchase is a course requirement. The original receipt or sales slip must be attached.

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9. IMPLEMENTATION. This order will be effective upon receipt. Action shall be taken by all participating organizations to determine the FY-75 program requirements and conduct the program on a continuing basis as necessary.


Alexander P. Butterfield
Administrator

PROCEDURES AND CRITERIA FOR SELECTION

1. GENERAL. The success of the program is largely dependent on the reliability of the selections made. The basic data for consideration in the selection process will be:
 - a. Candidate's cover letter giving reasons for desiring consideration.
 - b. Personal Qualifications Statement, Form SF-171.
 - c. Training records.
 - d. Transcripts of college records.
 - e. Performance Evaluation Record (P.E.R.), DOT F 3430.1.
 - f. Recommendations from supervisors including the first (P.E.R.) level.
2. SELECTING PANEL. A panel of not less than two engineers, in conjunction with a representative from the Manpower Division, should rate and rank the applicants using at least those sources listed above. The panel will establish and use appropriate rating factors but is restricted by the following limitations:
 - a. At the completion of the program, the employee should have at least ten years of service remaining before eligibility for retirement under current retirement provisions.
 - b. The employee must have already demonstrated his ability to successfully complete college level courses by having successfully completed sufficient credit hours equivalent to the first two years of a four-year engineering curriculum.
 - c. The credit hours in item b above must be acceptable to the receiving institution to provide acceptance of the individual as an upper-classman in undergraduate study of engineering. This normally requires a minimum of sixty semester hours including two semesters of chemistry, two semesters of physics, and two semesters of calculus (differential and integral). Since upperclassman admission requirements may vary from one college to another, each region must determine in advance the admission requirements of the college to be used and so state these requirements or equivalent in their announcement for applications. Care must be exercised to ensure that the employee will be eligible for taking the state EIT exam or will meet alternate CSC qualification requirements for a professional engineer upon completion of the 2-year training program.

- (2) Attach a letter stating his personal recommendations pro or con for the applicant's selection to the program, giving reasons for statements made.
 - (3) Forward package to the next higher level supervisor within ten days after receiving the application.
- d. Within ten days after receiving the package from item c above, the next higher supervisor will attach a letter stating any additional comments or recommendations for or against the applicant's selection, and forward the package to the applicant's division in the region or center.
- e. The sponsoring division shall:
- (1) Prepare a letter of recommendation and a brief summary of applicable contents of the employee's personnel folder.
 - (2) Forward all packages to the Manpower Division.
- f. The Manpower Division shall:
1. Review packages for completeness and consolidate each package with transcripts of records received from the educational institutions.
 2. Review each candidate's experience to determine the technician experience which may be accepted as equivalent to the professional experience required for the same grade as provided by the special noncompetitive provisions contained in CSC Qualification Handbook, Part II, X118. This may be accomplished either with or without the assistance of a panel. Candidates whose accumulated experience will not fully qualify them for in-grade reassignment at the end of the program will be informed of the decision and will not be eligible for the program.
 3. Convene rating panels, as necessary, to assist in the review and rating of candidates.
- g. The selection panel shall:
- (1) Review application packages and recommend candidates within the framework established in paragraph 2 of this appendix. It is expected that the panel will know the curriculum and entrance requirements of the approved college or university, the prerequisite qualification requirements of the respective State Boards of Examiners and the specific academic courses listed in CSC Professional Engineering Series Qualification Standards.

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- d. Accumulated Out-of-Agency training time must not be expected to exceed the limitations of TITLE V, USC, CHAPTER 41 - one year (2,080 hours) in any ten years of service unless waived by the Director of Training, ATR-1; in which case, two years (4,160 hours).
 - e. Selections are made without regard to applicant's race, color, creed, national origin, or sex.
 - f. A program in continuing education in the required discipline must qualify and prepare the selectee to prove eligibility for engineering status through the applicable state examinations for Engineer-in-Training or other methods approved by the Civil Service Commission.
 - g. Applicant's response to all segments of the request for consideration must be satisfactory and indicative of a real desire for self-development.
3. PROCEDURE. The rating, ranking and selection procedures outlined below shall be followed:
- a. All positions identified shall be advertised to include minimum qualification requirements determined from paragraph 2, deadline date for applications, and required contents of application.
 - b. The applicant shall prepare and submit to his supervisor:
 - (1) Personal Qualifications Statement, Form SF-171.
 - (2) Copies of training or educational records from other agencies, including the military, where applicable.
 - (3) Copies of letters requesting transcripts of college records. These letters shall request that the official copy be sent directly to the Manpower Chief by the institution, with all costs to be paid by the applicant.
 - (4) A cover letter briefly stating why the applicant wishes to participate in the program and what he plans to do in the way of self-development, if selected. He should describe any plan that he has for earning a Bachelor of Science Degree, his past and present efforts to implement the plan, and results to the present time.
 - c. The immediate supervisor shall review the above application package for content and accuracy, and:
 - (1) Attach copy of applicant's most recent Performance Evaluation Record, Form DOT F 3430.1.

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- (2) The panel shall select a list of acceptable alternates for each position. This will enable substitution in the event of a selectee's unexpected withdrawal or failure to obtain proper entrance acceptance at the college or university. No candidates shall be selected who cannot be expected to be reassigned at the grade level held prior to entering the program.
- h. Post selection procedures. Sponsoring organizations shall assure acceptance of the participant in the applicable college or university and make all possible advance plans for proceeding with the program. Final assignment of the selectee will be withheld pending his acceptance to the college or university. Formal announcement of the selectee may be made.
- i. An example of the method for determining the eligibility of a candidate is as follows:
 - (1) Obtain from the college or university a recommended overall curriculum in the required discipline which, in the judgement of the student counseling staff, will provide education required for qualification as an EIT with the State Board of Examiners having jurisdiction. Most colleges will indicate a curriculum leading to a degree in engineering.
 - (2) Obtain from the State Board of Examiners a complete listing of requirements for eligibility for applicants for EIT examinations. Where possible, discuss the entire program with State Board representatives to assure mutual understanding of the program goals.
 - (3) From the candidate's rating provided by the rating panel and his transcript of records, determine those portions of the above education and experience requirements that have not been achieved.
 - (4) Determine positively that the two-year program can reasonably provide the missing elements of both education and experience.

It is expected that the FAA Manpower representatives will be consulted in all cases for final judgment on eligibility.

AGREEMENTS TO BE SIGNED BY PARTICIPANT AND GOVERNMENT

Certain agreements must be developed mutually between the program participant and the Government as represented by the Federal Aviation Administration.

1. FAA Form 3000-3, Agreement to Continue in Service of the Agency. The agreement will be for the entire program; i.e., a three-year obligation to begin at the completion of the program.
2. A letter of mutual understanding covering at least the following subjects and signed by the participant and the FAA representative:
 - a. The agency agrees to pay costs of tuition, books, fees, etc., to the approved college or university for all courses required to complete the program curriculum within two years as established for the individual.
 - b. The program goal is to qualify and prepare the participant to perform engineering duties as demonstrated by his ability to pass the state administered examination for Engineering-in-Training or other engineering equivalency acceptable to the Civil Service Commission and the FAA, and to provide one year of working experience as an engineer in training.
 - c. The program curriculum does not in itself provide all credits needed for a Bachelor of Science Degree in Engineering. Acceptance of a degree by participants whose accumulated credits provide eligibility is permitted.
 - d. All courses taken outside the program curriculum shall be at the participant's expense and shall be dropped immediately in the event of failing grades in any required program study.
 - e. A failing final grade in any program course shall be cause for removal of the participant from the program and from the associated temporary position assignment unless waived by the sponsoring division chief. Retention privileges and restoration rights to a position equal to that held prior to entering the program will be in accordance with agency and CSC approved procedures at the time the action becomes necessary. The participant agrees to accept a position anywhere in the employing region or center.
 - f. For the duration of the program, the agency will assign the participant to a position within commuting distance of the college or university attended. This position will provide experience in the engineering discipline appropriate to the program as qualifying experience. Duties of the position will be subject to change as required by the program goal and the needs of the individual as determined by evaluation of his strengths and weaknesses.

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- g. The location of the assignment will become the participant's regular duty station for the duration of the program. Transfer of families and household goods will be made at Government expense. Per diem and other travel expenses will be subject to the provisions of the employing organization's Travel Handbook.
- h. The participant agrees to accept whatever position is assigned to him at the conclusion of the program so long as:
 - (1) It is at least the same grade as that which he held at the start of the program.
 - (2) It is classified as requiring the engineering discipline for which he has been prepared by the program.

STATE EXAMINATIONS

State requirements for eligibility to take the Engineer-in-Training and Professional Engineering Examinations, and other pertinent information are outlined below. The appropriate State Board of Examiners can provide additional information. Each board has the right to change any requirement or condition at any time; current requirements should be obtained from the addresses listed on pages 3 through 10.

1. DEFINITIONS. The following definitions are derived from "Model Law" which is the basis for most state requirements.
 - a. Professional(Registered) Engineer. A person who, by reason of his special knowledge of the mathematical and physical sciences, and the principles and methods of engineering analysis and design acquired by professional education and practical experience, is qualified to practice engineering and is so attested by his legal registration..
 - b. Engineer-in-Training. The EIT is a person who, through graduation from an approved engineering college, practical engineering experience or successful completion of an EIT examination, has received from the State Registration Board a certificate stating that he has successfully passed this portion of the professional engineering examinations.
 - c. Approved Experience. The type of practical experience required to qualify for registration at the EIT or PE level is not definitely defined or prescribed. Normally, the experience shall be in engineering work and of a character satisfactory to the registration board. The boards generally desire experience broad in scope and of a nature to develop the applicant's knowledge and judgment.
2. CIVIL SERVICE COMMISSION REQUIREMENTS. The CSC provides that individual dual-state recognition will be acceptable at the EIT or PE level as one of the alternate methods for demonstrating an adequate background of professional engineering-level knowledge and understanding.
3. STATE REGISTRATION BOARD REQUIREMENTS. Requirements vary somewhat from state to state; however, they are uniform enough to permit the generalized statement that education in an approved college or university plus experience, plus an examination, are qualifying for professional engineering status.
4. PREPARATION. Preparation towards obtaining a rating is largely an individual effort. The necessary study time, material, and expense must normally be contributed by participants and preparation should begin early enough so that examination eligibility will coincide with need for the rating.

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- a. The desirability of obtaining a rating goes far beyond the mere necessity for it. The course of study designed to prepare the applicant for examination is broad of base and firmly founded in the basic sciences and principles of engineering that are designed to develop the engineering approach.
- b. Course material necessary to effectively prepare for examination is available in sets. Individual state boards prescribe various sets of texts and will furnish interested persons with the lists upon request.

A LISTING OF THE STATE BOARDSAlabama State Board of Registration for Professional Engineers and Land Surveyors

Office of the Executive Secretary
Room 606, 64 N. Union Street
Montgomery, Alabama 36104

Alaska State Board of Engineers and Architects Examiners

Office of the Secretary
Box 1416, Juneau, Alaska 99801

Arizona State Board of Technical Registration

Office of the Executive Secretary
Suite 408, Guaranty Bank Building
3550 North Central Avenue
Phoenix, Arizona 85012

Arkansas State Board of Registration for Professional Engineers

Office of the Secretary-Treasurer
P.O. Box 4067
North Little Rock, Arkansas 72201

California State Board of Registration for Civil and Professional Engineers

Office of the Executive Secretary
1021 O Street, Room A-102
Sacramento, California 95814

Canal Zone Board of Registration for Architects and Professional Engineers

Office of the Secretary
P.O. Box 223, Balboa Heights, Canal Zone

Colorado State Board of Registration for Professional Engineers

Office of the Executive Secretary
Room 127, State Services Building
1525 Sherman Street
Denver, Colorado 80203

Connecticut State Board of Registration for Professional Engineers and

Land Surveyors

Office of the Secretary
Connecticut State Capitol Building
165 Capitol Avenue
Hartford, Connecticut 06115

Delaware State Board of Registration for Professional Engineers and Land

Surveyors

Office of the Secretary
1000 Washington Street
Wilmington, Delaware 19801

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District of Columbia Board of Registration for Professional Engineers
Office of the Executive Secretary
1145 19th Street, N.W.
Washington, D.C. 20036

Florida State Board of Engineer Examiners
Mrs. Ann P. Clover, Executive Secretary
408 John F. Seagle Building
Gainesville, Florida 32601

Georgia State Board of Registration for Professional Engineers and Land
Surveyors
Office of the Joint Secretary
166 Pryor Street, S.W.
Atlanta, Georgia 30303

Hawaii Board of Registration of Professional Engineers, Architects, Land
Surveyors and Landscaping Architects
Office of the Executive Secretary
P.O. Box 3469, Dept. of Regulatory Agencies
Honolulu, Hawaii 96801

Idaho State Board of Engineering Examiners
Office of the Secretary
1205 Capitol Blvd.
Boise, Idaho 83706

Illinois Professional Engineer's Examining Committee
Supt. of Registration
State Capitol
Springfield, Illinois 62706

Indiana State Board of Registration for Professional Engineers and Land
Surveyors
Office of the Secretary
1007 State Office Building
Indianapolis, Indiana 46204

Iowa State Board of Engineering Examiners
Office of the Secretary
821 Des Moines Street
Des Moines, Iowa 50319

Kansas State Board of Engineering Examiners
Office of the Executive Secretary
State Office Building
Topeka, Kansas 66612

Kentucky State Board of Registration for Professional Engineers
Office of the Secretary
120 Graham Avenue
Lexington, Kentucky 40506

Louisiana State Board of Registration for Professional Engineers and Land Surveyors
Office of the Executive Secretary
4747 Earhart Blvd., Suite 207
New Orleans, Louisiana 70125

Maine State Board of Registration for Professional Engineers
Office of the Secretary
State House
65 Westwood Road
Augusta, Maine 04330

Maryland State Board of Registration for Professional Engineers and Land Surveyors
Office of the Executive Secretary
301 W. Preston Street, State Office Building
Baltimore, Maryland 21201

Massachusetts State Board of Registration of Professional Engineers and Land Surveyors
Office of the Secretary
Room 1512, State Office Building
100 Cambridge Street
Boston, Massachusetts 02202

Michigan State Board of Registration for Architects, Professional Engineers and Land Surveyors
Office of the Executive Secretary
2000 Lafayette Building
Detroit, Michigan 48226

Minnesota State Board of Registration for Architects, Engineers and Land Surveyors
Office of the Executive Secretary
1512 Pioneer Building
St. Paul, Minnesota 55101

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Mississippi State Board of Registration for Professional Engineers
Office of the Secretary
P.O. Box 3
Jackson, Mississippi 39205

Missouri State Board of Registration for Architects and Professional Engineers
Office of the Secretary
312 East Capitol
Jefferson City, Missouri 65101

Montana State Board of Registration for Professional Engineers and Land Surveyors
Office of the Executive Secretary
Lanlonde Building
Helena, Montana 59601

Nebraska State Board of Examiners for Professional Engineers and Architects
Office of the Secretary
512 Terminal Building, 941 "O" Street
Lincoln, Nebraska 68508

Nevada State Board of Registered Professional Engineers
Office of the Secretary
P.O. Box 5208
Reno, Nevada 89503

New Hampshire State Board of Registration for Professional Engineers
Office of the Secretary
c/o Secretary of State, State House
15 North Maine
Concord, New Hampshire 03301

New Jersey State Board of Professional Engineers and Land Surveyors
Office of the Secretary
1100 Raymond Blvd.
Newark, New Jersey 07102

New Mexico State Board of Registration for Professional Engineers and Land Surveyors
Office of the Secretary
P.O. Box 4847
Santa Fe, New Mexico 87501

New York State Board of Examiners of Professional Engineers and Land Surveyors
Office of the Secretary
State Education Department
Albany, New York 12224

North Carolina State Board of Registration for Professional Engineers
and Land Surveyors

Office of the Secretary
1307 Glenwood Avenue, Suite 152
Raleigh, North Carolina 27605

North Dakota State Board of Registration for Professional Engineers and
Land Surveyors

Office of the Secretary
P.O. Box 1264
Minot, North Dakota 58701

Ohio State Board of Registration for Professional Engineers and Surveyors

Office of the Executive Secretary
21 West Broad Street
Columbus, Ohio 43215

Oklahoma State Board of Registration for Professional Engineers and Land
Surveyors

Office of the Executive Secretary
401 United Founders Tower
Oklahoma City, Oklahoma 73112

Oregon State Board of Engineering Examiners

Office of the Secretary
158 12th Street
Salem, Oregon 97310

Pennsylvania State Registration Board for Professional Engineers

Office of the Secretary
Box 2649
Harrisburg, Pennsylvania 17105

Puerto Rico State Board of Examiners of Engineers, Architects and Surveyors

Office of the Secretary
P.O. Box 3271
San Juan, Puerto Rico 00903

Rhode Island State Board of Registration for Professional Engineers and
Land Surveyors

Office of the Secretary
246 State Office Building
Providence, Rhode Island 02903

South Carolina State Board of Engineering Examiners

Office of the Executive Secretary
710 Palmetto State Life Building
Columbia, South Carolina 29201

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South Dakota State Board of Engineering and Architectural Examiners
Office of the Secretary
2040 West Main Street, Suite 212
Rapid City, South Dakota 57701

Tennessee State Board of Architectural and Engineering Examiners
Office of the Secretary
P.O. Box 1810, Station "B"
Nashville, Tennessee 37203

Texas State Board of Registration for Professional Engineers
Office of the Executive Secretary
Room 200, 1400 Congress Avenue
Austin, Texas 78701

Utah Representative Committee of Professional Engineers and Land Surveyors
Office of the Director, Department of Registration
330 East 4th South
Salt Lake City, Utah 84111

Vermont State Board of Registration for Professional Engineers
Office of the Executive Secretary
Norwich University
Northfield, Vermont 05663

Virginia State Board for the Examination and Certification of Architects,
Professional Engineers, and Land Surveyors
Office of the Secretary
P.O. Box 1-X
Richmond, Virginia 23202

Washington State Board of Registration for Professional Engineers and
Land Surveyors
Office of the Executive Secretary
P.O. Box 649
Olympia, Washington 98501

West Virginia State Registration Board for Professional Engineers
Office of the Secretary
301 Morrison Building
Charleston, West Virginia 25301

Wisconsin State Registration Board of Architects and Professional Engineers
Office of the Secretary
1100 State Office Building, 1 West Wilson Street
Madison, Wisconsin 53702

Wyoming State Board of Examining Engineers
State Office Building
Cheyenne, Wyoming 82002

ESTABLISHMENT OF APPROVED CURRICULUM FOR
COOPERATIVE ENGINEER DEVELOPMENT PROGRAM

The following are general instructions for developing an educational curriculum for participants in the program. Final decisions on required courses should be made individually for each selectee.

Expert assistance can be expected from the student counseling staff at the universities, the nearest offices of the Engineers' Council for Professional Development, and the State Board of Examiners.

1. REQUIRED COURSES. Completion of certain courses will be required prior to or during the program. These are of the following general types:
 - a. Engineering mathematics at least through differential and integral calculus.
 - b. All technical courses required for the discipline involved by the regular university curriculum.
 - c. All science courses required by the regular university curriculum.
 - d. Specified elective courses where the university designates a detailed group from which a choice must be made except where these are of the types excluded in paragraph 3 below.
2. PERMITTED OR MARGINAL TYPES (not mandatory). Courses of these general types may be used for elective courses where participant possesses sufficient credits to permit these studies without overcrowding his schedule.
 - a. Engineering supporting courses such as general economics, engineering report writing, basic surveying, engineering economics; include also nonelective courses in English.
 - b. Basic technical courses associated with other engineering disciplines where knowledge obtained will enhance participant's value to the agency.
 - c. Special and graduate courses in advanced technical subjects, new theories, and new techniques. Examples might be studies pertaining to micro-modular design and application, subminiaturization, etc., where the subject matter pertains to the discipline required.
 - d. Refresher courses in engineering required or related mathematics, chemistry, and physics (noncredit).

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3. NONAUTHORIZED TYPES. The following types of courses are recognized as being a regular part of the curriculum for a full Bachelor of Science Degree. While it is desired that participants study towards a degree, it is not the intent of this program to provide it. Courses of these types are not deemed necessary for successfully passing the state examination and will not be taken at Government expense:
- a. Language courses (including elective English courses, Latin, foreign, modern, etc.; descriptive writing, etc.).
 - b. Psychology and other human relation courses unless prerequisite to required science or technical courses.
 - c. Law courses such as Patent Law, Industrial Relations, etc., except where state boards customarily grade heavily on the subject in examinations.
 - d. Physical Education courses.
 - e. Any course whose value to the goal of the program is not apparent and which is not prerequisite to a required course; examples: management theory, operations research, liberal arts, and reading courses, public speaking, etc.

Care must be used to ascertain that the limitation on accumulated Out-of-Agency training time at Government expense is not exceeded. This time is accrued by actual attendance time in a classroom and is limited to one year (2,080 hours) in any 10-year period of Government service. Refer to TITLE V, USC, CHAPTER 41.